



PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031

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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/627,302
		Filing Date	7/24/03
		First Named Inventor	Patel, et al
		Art Unit	Not Yet Assigned
		Examiner Name	Not Yet Assigned
Sheet	1	of	10
		Attorney Docket Number	P092-US

U.S. PATENT DOCUMENTS					
Examiner Initials ⁵	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
BNT	AA	US- 3,511,727	05-12-1970	Hays, R.G.	
	AB	US- 4,190,488	02-26-1980	Winters, H.F.	
	AC	US- 4,310,380	12-12-1982	Flamm et al.	
	AD	US- 4,498,953	02-12-1985	Cook et al.	
	AE	US- 4,695,700	09-22-1987	Provence et al.	
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	AI	US- 5,206,471	04-27-1993	Smith, D.K.	
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	AK	US- 5,439,553	08-08-1995	Grant et al.	
	AL	US- 5,534,107	07-09-1996	Gray et al.	
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	AP	US- 5,753,073	05-19-1998	Jen,	
	AQ	US- 5,757,456	05-26-1998	Yamazaki et al.	
	AR	US- 5,835,256	11-10-1998	Huibers, A.	
	AS	US- 5,858,065	01-12-1999	Li et al.	
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Examiner Initials ⁵	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	-Number ⁴ - Kind Code ⁵ (if known)				
BNT	BA	EP-0704884	A2	04-03-1996	Mehta, J.		
	BB	EP-0822582	A2	02-04-1998	Bhardwai, J.K.		
	BC	EP-0822584	A2	04-04-1998	Bhardwai, J.K.		
	BD	EP-0838839	A2	04-29-1998	Bhardwai, J.K.		
	BE	EP-0878824	A2	11-18-1998	McQuarrie et al.		
	BF	EP-0878824	A3	01-19-2000	McQuarrie et al.		
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	BH	WO-98/05605		02-12-1998	Bhardwai, J.K.		
	BI	WO-98/13856		04-02-1998	Bhardwai, J.K.		
	BJ	WO-98/32163		07-23-1998	Tai et al.		

Examiner Signature	<i>Brandi Thoma</i>	Date Considered	8/12/04
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BNT	AU	US- 6,051,503	04-18-2000	Bhardwaj, J.K.	
	AV	US- 6,162,367	12-19-2000	Tai et al.	
	AW	US- 6,277,173 B1	08-21-2001	Sadakata et al.	
	AX	US- 6,290,864 B1	09-18-2001	Patel et al.	
	AY	US- 6,328,801 B1	12-11-2001	Gary et al.	
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BNT	BK	WO-99/01887	01-14-1999	Lea et al.		
	BL	WO-99/03313	01-21-1999	Lea et al.		
	BM	WO-99/49506	09-30-1999	McQuarrie, A.D.		
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Examiner Signature	<i>Branch Sh</i>	Date Considered	8/2/04
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BNT	BU	JP	1986/61187238-A	08-20-1986	Nobuo et al.	
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	CC	JP	1992/04096222-A	03-27-1992	Atsuyuki, A.	
	CD	JP	1995/07029823-A	01-31-1995	Hiroshi, T.	

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BNT		US- 2002/0164879 A1	11/07/02	Leung, et al.	
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		Country Code ³ - Number ⁴ - Kind Code ⁵ (if known)				
BNT	CE	JP-1997/09251981-A	09-22-1997	Kazuaki et al.		
	CF	JP-1998/10313128-A	11-24-1998	Hanmin et al.		
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		WO 2004/000720 A1	12/31/03	Pan, et al.		
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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
BNT	DA	ALIEV et al., "Development of Si(100) Surface Roughness at the Initial Stage of Etching in F ₂ and XeF ₂ Gases Ellipsometric Study", Surface Science 442 (1999), pp. 206-214.	
	DB	GLIDEMEISTER, J.M., "Xenon Difluoride Etching System" (Nov. 17, 1997).	
	DC	HABUKA et al., "Dominant Overall Chemical Reaction in a Chlorine Trifluoride-Silicon-Nitrogen System at Atmospheric Pressure", Japan Journal of Applied Physics Vol. 38 (1999), pp. 6466-6469.	
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	DE	HOULE, F.A., "Dynamics of SiF ₄ Desorption During Etching of Silicon by XeF ₂ ", IBM Almaden Research Center (April 15, 1987), pp. 1866-1872.	
	DF	FLAMM et al., "XeF ₂ and F-Atom Reactions with Si: Their Significance for Plasma Etching", Solid State Technol. 26, 117 (1983).	
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	DI	STRELLER et al., "Selectivity in Dry Etching of Si (100) and XeF ₂ and VUV Light", Elsevier Science B.V., Applied Surface Science Vol. 106 (1996), pp. 341-346.	
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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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BNT	DL	WINTERS, H.F., "Etch Products from the Reaction of XeF ₂ with SiO ₂ , SiO ₃ , Si ₃ N ₄ , SiC, and Si in the Presence of Ion Bombardment", J. Vac. Sci. Technol. B 1(4) (Oct/Dec 1983), pp. 927-931.	
	DM	WINTERS et al., "The Etching of Silicon with XeF ₂ Vapor", Appl. Phys. Letter, Vol. 34(1) (January 1, 1979), pp. 70-73.	
	DN	XACTIX, Inc., Marketing Brochure (June 27, 1999).	
	DO	"Xenon Difluoride Isotropic Etch System: Seeing is Believing", Surface Technology Systems Ltd. brochure, Newport, UK (date unknown).	
	DP	Assorted promotional literature, Surface Technology Systems Ltd., Newport, UK (July 28, 1999).	
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		Krishna C. Saraswat, et al., Properties of Low-Pressure CVD Tungsten Silicide for MOS VLSI Interconnections, 1983 IEEE, pgs	
BNT		F. Mohammadi, et al., Properties of Sputtered Tungsten Silicide for MOS Integrated Circuit Applications. pgs 450-454	

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BUT	BA	ANDERSON, H.M., "Plasma Diagnostics for Semiconductor Processing", 2000 Digest of the LEOS Topical Meetings (July 24 - 28, 2000), pp. 117-118 (abstract only).	
	BB	BARYSHEV et al., "Monitoring of XIO_2/Si Plasma Etching and End-Point Detection", Mikroelektronika (Russia), Vol. 25, No. 5 (Sep/Oct 1996), pp. 373-379 (abstract only).	
	BC	BASSOM et al., "Modeling and Optimizing XeF_2 -enhanced FIB Milling of Silicon", 25th International Symposium for Testing and Failure Analysis, Santa Clara, CA (Nov. 14 -18, 1999), pp. 255-261 (abstract only).	
	BD	BERG et al., "Real-Time Control of Etching Processes: Experimental Results", Proceedings of the SPIE - The International Society for Optical Engineering, Vol. 3213 (1997), pp. 249-260 (abstract only).	
	BE	CHAMBERS et al., "Endpoint Uniformity Sensing and Analysis in Silicon Dioxide Plasma Etching Using In Situ Mass Spectrometry", J. Vac. Sci. Technol. B, Microelectron. Nanometer Struct., Vol. 16, No. 6 (Nov/Dec 1998), pp. 2996-3002 (abstract only).	
	BF	CHAN et al., "Gas Phase Pulse Etching of Silicon for MEMS with Xenon Difluoride", Engineering Solutions for the Next Millenium: 1999 IEEE Canadian Conference on Electrical and Computer Engineering, Edmonton, Alberta, Vol. 3 (May 9 - 12, 1999), pp. 1637-1642 (abstract only).	
	BG	CHANG et al., "Gas-Phase Silicon Micromachining with Silicon Difluoride", Proceedings of the SPIE - The International Society for Optical Engineering, Vol. 2641 (1995), pp. 117-128 (abstract only).	
	BH	CHEN et al., "Spatially Resolved Endpoint Detector for Plasma Etcher", 1997 IEEE International Symposium on Semiconductor Manufacturing Conference Proceedings, San Francisco, CA (Oct. 6 - 8, 1997), pp. B45 - B48 (abstract only).	
	BI	CHU et al., "Controlled Pulse-Etching with Xenon Difluoride", International Solid State Sensors and Actuators Conference (Transducers '97), Chicago, IL, Vol. 1 (June 16 - 19, 1997), pp. 665-668 (abstract only).	
	BJ	HEINRICH et al., "Multichannel Process Monitor for Real-Time Film Thickness and Rate Measurements in Dry Etching and Deposition", Vacuum, Vol. 51, No. 4, (Dec. 1998), pp. 497-502 (abstract only).	
BK	KOHLER et al., "Fabrication of Microlenses by Plasmaless Isotropic Etching Combined with Plastic Moulding", Sens. Actuators A, Phys. (Switzerland), Vol. A53, No. 1-3 (May 1996), pp. 361-363 (abstract only).		

Examiner Signature	Brandi Thomas	Date Considered	8/2/04
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 8 of 10

Complete if Known

Application Number	10/627,302
Filing Date	Herewith
First Named Inventor	Patel, et al
Group Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	P092US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
BNT	BL	LI et al., "Mass Spectrometric Measurements on Inductively Coupled Fluorocarbon Plasmas: Positive Ions, Radicals and Endpoint Detection", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 17, No. 5 (Sept. 1997), pp. 2438-2446 (abstract only).	
	BM	LIAMANO et al., "Production Data Based Optimal Etch Time Control Design for a Reactive Ion Etching Process", IEEE Trans. Semicond. Manuf., Vol. 12, No. 1 (Feb. 1999), pp. 139-147 (abstract only).	
	BN	LITVAK, H.E., "End Point Control Via Optical Emission Spectroscopy", J. Vac. Sci. Technol. B, Microelectron. Nanometer Struct., Vol. 14, No. 1 (Jan/Feb 1996), pp. 516-520 (abstract only).	
	BO	LU et al., "Effluent Monitoring with FTIR Spectroscopy for Low Open Area Oxide Etch Endpoint Detection", 8th International Symposium on Semiconductor Silicon, San Diego, CA, Vol. 2 (May 4 - 8, 1998), pp. 1250-1261 (abstract only).	
	BP	MAYNARD et al., "Plasma Etching of Submicron Devices: In Situ Monitoring and Control by Multi-Wavelength Ellipsometry", Thin Solid Films (Switzerland), Vol. 313-314, No. 1-2 (Feb. 1998), pp. 398-405 (abstract only).	
	BQ	MELVILLE et al., "Volatile Products and Endpoint Detection in Reactive Ion Etching of III-V Compounds with a Broad Beam ECR Source", Nuclear Instruments & Methods in Physics Research, Section B (Beam Interactions with Materials and Atoms), Vol. B106, No. 1-4 (Dec. 1995), pp. 179-182 (abstract only).	
	BR	MUTHUKUMARAN et al., "Gas-Phase Xenon Difluoride Etching of Microsystems Fabricated Through the Mital 1.5- μ m CMOS Process", Can. J. Electr. Comput. Eng. (Canada), Vol. 25, No. 1 (Jan. 2000), pp. 35-41 (abstract only).	
	BS	PERRIN, J., "Mass Spectrometry of Reactive Plasmas", Plasma Processing of Semiconductors, Chateau de Bonas, France (June 17 - 28, 1996), pp. 397-431 (abstract only).	
	BT	RICHTER et al., "Exhaust Gas Monitoring: New Window Into Semiconductor Processing", Solid State Technol., Vol. 42, No. 5 (May 1999), pp. 61, 63-64, 68, 70-71 (abstract only).	
	BU	SAITO et al., "Low Temperature Plasmaless Etching of Silicon Dioxide Film Using Chlorine Trifluoride Gas with Water Vapor", J. Electrochem. Soc., Vol. 147, No. 12 (Dec. 2000), pp. 4630-4632 (abstract only).	
BNT	BV	SEBEL et al., "Etching of Si Through a Thick Condensed XeF ₂ Layer", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 18, No. 5 (Sep/Oct 2000), pp. 2090-2097 (abstract only).	

Examiner
Signature

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Date

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Substitute for form 1449B/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/627,302	
			Filing Date	Herewith	
			First Named Inventor	Patel, et al	
			Group Art Unit	Not Yet Assigned	
			Examiner Name	Not Yet Assigned	
Sheet	9	of	10	Attorney Docket Number	P092US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
BNT	BW	SEBEL et al., "Reaction Layer Dynamics in Ion-Assisted Si/XeF ₂ Etching: Temperature Dependence", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 18, No. 6, (Nov. 2000), pp. 2759-2769 (abstract only).	
	BX	SEBEL et al., "Silicon Etch Rate Enhancement by Traces of Metal", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 17, No. 3, (May/June 1999), pp. 755-762 (abstract only).	
	BY	SUGANO et al., "Study on XeF ₂ Pulse Etching Using Wagon Wheel Pattern", Proceedings of the 1999 International Symposium on Micromechanics and Human Science: Towards the New Century, Nagoya, Japan (Nov. 23 - 26, 1999), pp. 163-167 (abstract only).	
	BZ	SUN et al., "Sensitive Plasma Etching Endpoint Detection Using Tunable Diode Laser Absorption Spectroscopy", Appl. Phys. Lett., Vol. 64, No. 21 (May 23, 1994), pp. 2779-2781 (abstract only).	
	CA	THOMAS et al., "Minimized Response Time of Optical Emission and Mass Spectrometric Signals for Optimized Endpoint Detection", J. Vac. Sci. Technol. B, Microelectron. Nanometer Struct., Vol. 14, No. 4 (July/Aug 1996), pp. 2531-2536 (abstract only).	
	CB	TODA et al., "Thin Beam Bulk Micromachining Based on RIE and Xenon Difluoride Silicon Etching", International Solid State Sensors and Actuators Conference (Transducers '97), Chicago, IL, Vol. 1 (June 16 - 19, 1997), pp. 671-674.	
	CC	VUGTS et al., "Si/XeF ₂ Etching: Reaction Layer Dynamics and Surface Roughening", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 14, No. 5 (Sep/Oct 1996), pp. 2780-2789 (abstract only).	
	CD	VUGTS et al., "Si/XeF ₂ Etching: Temperature Dependence", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 14, No. 5 (Sep/Oct 1996), pp. 2766-2774 (abstract only).	
	CE	WAN et al., "Electron Cyclotron Resonance Plasma Reactor for SiO ₂ Etching: Process Diagnostics, End-Point Detection, and Surface Characterization", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 13, No. 4 (July/Aug 1995), pp. 2035-2043 (abstract only).	
	CF	WANG et al., "Gas-Phase Silicon Etching with Bromine Trifluoride", International Solid State Sensors and Actuators Conference (Transducers '97), Chicago, IL, Vol. 2 (June 16 - 19, 1997), pp. 1505-1508 (abstract only).	
BNT	CG	WARD, P.P., "Plasma Process Control with Optical Emission Spectroscopy", 17th IEEE/CPMT International Electronics Manufacturing Technology Symposium: Manufacturing Technologies - Present and Future, Austin, TX (Oct. 2 - 4, 1995), pp. 166-169 (abstract only).	

Examiner Signature	Brandi Thomas	Date Considered	8/2/04
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Application Number	10/627,302	
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BNT	CH	WARNEKE, et al., "In Situ Characterization of CMOS Post-Process Micromachining", Sens. Actuators A, Phys. (Switzerland), Vol. A89, No. 1-2 (March 20, 2001), pp. 142-151 (abstract only).	
	CI	WELCH et al., "Breaking the 0.5 Percent Exposed Area Etch Endpoint Barrier", Semicond. Int., Vol. 19, No. 8 (July 1996), pp. 269-270, 272, 274, 276 (abstract only).	
	CJ	WODECKI, N.D., Low Open Area Multi-Layered Dielectric Film Etch Endpoint Detection Using EndPoint Plus (TM)*, Proceedings of the SPIE - The International Society for Optical Engineering, Vol. 3882 (1999), pp. 231-238 (abstract only).	
	CK	WONG et al., "Endpoint Prediction for Polysilicon Plasma Etch Via Optical Emission Interferometry", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 15, No. 3, Pt. 2 (May/June 1997), pp. 1403-1408 (abstract only).	
BNT	CL	YUE et al., "Plasma Etching Endpoint Detection Using Multiple Wavelengths for Small Open Area Wafers", J. Vac. Sci. Technol. A, Vac. Surf. Films, Vol. 19, No. 1 (Jan. 2001), pp. 66-75 (abstract only).	

Examiner Signature	<i>Bradley J. Lee</i>	Date Considered	8/2/04
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INFORMATION DISCLOSURE CITATION PTO-1449				ATTY. DOCKET NO. P92-US		SERIAL NO. Not Yet Assigned	
				APPLICANT Patel, et al.			
				FILING DATE 7/24/03		GROUP Not Yet Assigned	
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE	
BNT	6,028,690	02/22/00	Carter, et al.				
FOREIGN PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
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						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)							
EXAMINER	Brandi Thomas			DATE CONSIDERED 8/2/04			

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